

**IN THE CLAIMS:**

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 2, 7, 9 and 11-22, and AMEND claims 1, 3 and 10 in accordance with the following:

1. (Currently Amended)      A linear compressor, ~~comprising: having~~  
a core combined to one end of a piston to detect a position of the piston reciprocally moving up and down; and  
a first sensor coil and a second sensor coil connected in series, to detecting the position of the core,  
wherein the core comprises:  
an upper core having a length shorter than one half of the length of the first sensor coil ~~and plus the length of the second sensor coil in series; and~~  
a lower core being spaced from the upper core by a predetermined distance, the lower core having a length shorter than one half of the length of the first sensor coil plus the length of the second sensor coil.
2. (Cancelled)
3. (Currently Amended)      The linear compressor according to claim ~~2~~1, wherein a middle point between the upper core and the lower core passes a middle point between the first sensor coil and the second sensor coil when the piston passes a center point of a reciprocal moving path of the piston.

4. (Original) The linear compressor according to claim 1, comprising:  
a first branch comprising the first sensor coil and a predetermined first dividing resistor connected in series;  
a second branch comprising the second sensor coil and a predetermined second dividing resistor connected in series;  
a power source applied to the first branch and the second branch; and  
a voltage comparator that receives voltages applied to the first dividing resistor and the second dividing resistor as inputs.

5. (Original) The linear compressor according to claim 4, wherein the voltage comparator receives voltages taken from the opposite terminals of each of the first sensor coil and the second sensor coil as the inputs.

6. (Original) The linear compressor according to claim 1, further comprising a controller controlling the position of the piston based on a top dead center detected by measuring a time that a center point of the upper core takes to pass a coil origin, or a middle point between the first sensor coil and the second sensor coil, according to reciprocal movement of the piston.

7. (Cancelled)

8. (Original) The linear compressor according to claim 4, further comprising a controller controlling the position of the piston by detecting a top dead center based on the time taken for an output of the voltage comparator to become 0 twice as the piston is positioned near the top dead center.

9. (Cancelled)

10. (Currently Amended) The linear compressor according to claim 21, further comprising a controller detecting an offset value indicating the degree a center point of reciprocation movement of the piston is off from a predetermined center point by measuring a difference of time that a center point of the upper core takes to pass a coil origin positioned at a middle point between the first sensor coil and the second sensor coil, and by measuring an

elapsed time that a center point of the lower core takes to pass the coil origin according to the reciprocal movement of the piston.

11-22. (Cancelled)